

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ON SEMICONDUCTOR CORP. and)
SEMICONDUCTOR COMPONENTS)
INDUSTRIES, L.L.C.,)

Plaintiffs,)

v.)

SAMSUNG ELECTRONICS CO., LTD.,)
SAMSUNG ELECTRONICS AMERICA, INC.,)
SAMSUNG TELECOMMUNICATIONS)
AMERICA GENERAL, L.L.C.,)
SAMSUNG SEMICONDUCTOR, INC., and)
SAMSUNG AUSTIN SEMICONDUCTOR L.L.C.,)

Defendants.)

C.A. No. 07-449 (JJF)

SAMSUNG ELECTRONICS CO., LTD.,)
SAMSUNG ELECTRONICS AMERICA, INC.,)
SAMSUNG TELECOMMUNICATIONS)
AMERICA GENERAL, L.L.C.,)
SAMSUNG SEMICONDUCTOR, INC., and)
SAMSUNG AUSTIN SEMICONDUCTOR L.L.C.,)

Plaintiffs,)

v.)

ON SEMICONDUCTOR CORP. and)
SEMICONDUCTOR COMPONENTS)
INDUSTRIES, L.L.C.,)

Defendants.)

C.A. No. 06-720 (JJF)

AMENDED JOINT CLAIM CONSTRUCTION CHART

ON Semiconductor Corp. and Semiconductor Components Industries, L.L.C.
(collectively “ON Semiconductor”) and Samsung Electronics Co. Ltd., Samsung Electronics
America, Inc., Samsung Telecommunications America General, L.L.C., Samsung
Semiconductor, Inc., and Samsung Austin Semiconductor L.L.C. (collectively “Samsung”)
hereby submit this Amended Joint Claim Construction Chart. The parties are submitting this

Amended Joint Claim Construction Chart to reflect the areas where the parties have narrowed their dispute and agreed upon certain claim constructions.

I. STIPULATED CONSTRUCTIONS.

During the meet and confer process, the parties have agreed upon the constructions set forth in **Exhibit A** for U.S. Patent No. 5,000,827 (the “’827 Patent”), U.S. Patent No. 5,361,001 (the “’001 Patent”), U.S. Patent No. 5,563,594 (the “’594 Patent”), U.S. Patent 6,362,644 (the “’644 Patent”) and U.S. Patent No. 5,252,177 (the “’177 Patent”).

II. CLAIM TERMS REQUIRING CONSTRUCTION BY THE COURT.

The parties’ Amended Joint Claim Construction Charts for the ’827 Patent, the ’001 Patent, the ’594 Patent, the ’644 Patent and the ’177 Patent are attached hereto as **Exhibits B, C, D, E and F**, respectively. Each chart identifies the first occurrence of disputed claim terms in each patent, the parties’ proposed constructions for the disputed claim terms, and the parties’ identification of the intrinsic and/or extrinsic evidence supporting its proposed construction.

The proffered constructions in this Amended Joint Claim Construction Chart differ from those in the Joint Claim Chart submitted on March 31, 2008 (*see, e.g.*, D.I. 90 (C.A. No. 07-449)), in the following respects:¹

- **Exhibit A** has been modified to reflect the parties’ agreement on the construction of the terms “load element(s),” “terminate,” and “loading” from the ’644 Patent, and the terms “removing said photoresist pattern” and “removing remaining

¹ Both parties have modified the evidence supporting their proposed constructions since the filing of the Joint Claim Construction Charts on March 31, 2008. The evidence ON Semiconductor cites in support of its proposed constructions is reflected in its claim construction briefing, and the evidence Samsung cites is reflected in the exhibits to this Amended Joint Claim Construction Chart as well as its claim construction briefing.

photoresist” from the ’177 Patent. **Exhibits E and F** (pertaining to disputed terms) have been modified to delete these terms.

- Samsung has modified its proposed constructions of “metallized bumps” and “said bumps being of substantially uniform height across said substrate” in the ’827 Patent (*see* **Exhibit B**).
- The parties have modified their proposed constructions of “setting said control signal to a fixed value after removal of said signal,” Samsung has modified its proposed construction of “analog trimming,” and ON Semiconductor has modified its proposed construction of “control signal” in the ’001 Patent (*see* **Exhibit C**).
- The parties have modified their proposed constructions of “control signal,” Samsung has modified its proposed constructions of “a register having an input coupled for receiving parallel input data and having an output” and “comparator,” and ON Semiconductor has modified its proposed constructions of “clock signal” and “data transfer signal” in the ’594 Patent (*see* **Exhibit D**).
- The parties have modified their proposed constructions of “control signal,” Samsung has modified its proposed constructions of “pin(s)” and “first and second load elements are coupled to third and fourth pins of the semiconductor package to provide a programmable termination,” and ON Semiconductor has modified its proposed construction of “termination signal” in the ’644 Patent (*see* **Exhibit E**).

- The parties have modified their proposed constructions of “simultaneously form a protective oxide layer” and removed “mostly aluminum” from the list of disputed claim terms, Samsung has modified its proposed construction of “photoresist pattern,” “removing said oxide layer before forming a second conductive layer on said exposed top surface of said first conductive layer,” and “removing said oxide layer before forming said second conductive layer on said exposed top surface of said first conductive layer,” and ON Semiconductor has modified its proposed construction of “protective oxide layer” in the ’177 Patent (*see Exhibit F*).

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

/s/ Richard J. Bauer

Karen Jacobs Loudon (#2881)
Richard J. Bauer (#4828)
1201 N. Market Street
P.O. Box 1347
Wilmington, DE 19899
(302) 658-9200
rbauer@mnat.com

*Attorneys for ON Semiconductor Corp. and
Semiconductor Components Industries,
L.L.C.*

Of Counsel:

Kenneth R. Adamo
JONES DAY
2727 North Harwood Street
Dallas, TX 75201-1515
(214) 220-3939

YOUNG, CONAWAY, STARGATT & TAYLOR LLP

/s/ Andrew A. Lundgren

John W. Shaw (#3362)
Andrew A. Lundgren (#4429)
The Brandywine Building
1000 West Street, 17th Floor
Wilmington, DE 19801
(302) 571-6600
alundgren@ycst.com

*Attorneys for Samsung Electronics Co., Ltd.,
Samsung Electronics America, Inc., Samsung
Telecommunications America General, L.L.C.,
Samsung Semiconductor, Inc. and Samsung
Austin Semiconductor, L.L.C.*

Of Counsel:

John M. Desmarais
Jon T. Hohenthanner
James E. Marina
KIRKLAND & ELLIS LLP
153 East 53rd Street
New York, NY 10022
(212) 446-4800

Tharan Gregory Lanier
Behrooz Shariati
JONES DAY
1755 Embarcadero Road
Palo Alto, CA 94303
(650) 739-3939

Edward C. Donovan
KIRKLAND & ELLIS LLP
655 Fifteenth Street, N.W.
Washington, D.C. 20005-5793
(202) 879-5000

May 21, 2008

EXHIBIT A

ON Semiconductor Corp. v. Samsung Electronics Co., Ltd.,
(Case No. 07-449-JJF)

Samsung Electronics Co., Ltd., v. ON Semiconductor Corp.
(Case No. 06-720-JJF)

STIPULATED CONSTRUCTIONS

U.S. Patent No. 5,000,827

First appearing in Claim 1:

- ***flow rate***: “a measure of volume flowing per unit of time”

U.S. Patent No. 5,361,001

First appearing in Claim 4:

- ***latching***: “holding data in a ready position or condition”

U.S. Patent No. 6,362,644

First appearing in Claim 6

- ***load element(s)***: “a load on a transmission line or other device whose impedance approximates that of the line”
- ***terminate***: “the use of a load on a transmission line or other device whose impedance approximates that of the line”

First appearing in Claim 12

- ***semiconductor package***: “package, such as an enclosure, for a semiconductor device”
- ***loading***: “applying a load on a transmission line or other device whose impedance approximates that of the line”

U.S. Patent No. 5,252,177

First appearing in Claim 1:

- ***removing said photoresist pattern***: “removing photoresist”

First appearing in Claim 8:

- ***removing remaining photoresist***: “removing photoresist”

EXHIBIT B**ON Semiconductor Corp. v. Samsung Electronics Co., Ltd.**
(Case No. 07-449-JJF)**Samsung Electronics Co., Ltd., v. ON Semiconductor Corp.**
(Case No. 06-720-JJF)**Disputed Terms from U.S. Patent No. 5,000,827**

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
1. A method of forming metallized bumps on predetermined terminal areas of a planar substrate, said bumps being of substantially uniform height across said substrate, wherein said method comprises:	<p><i>metallized bumps:</i> ON Semiconductor notes that this term appears only in the preamble of the asserted claim. Because this term does not recite limitations or give life, meaning, and vitality to the claim, no construction is needed. If the Court is inclined to construe this term, however, ON Semiconductor contends that it should be construed as follows:</p> <p>“the non-planar accumulation of a metal layer or layers”</p>	<p><i>metallized bumps:</i> “Small mounds of metal that are utilized as contacts.” The preamble is a limitation.</p>	<p>’827 Patent: col. 1:9-13, 1:15-18, 1:30-37, 1:50-52, 1:53-60, 2:29-35, 2:36-41, 5:46-49, and related Figures.</p> <p>C R M Grovenor, <i>Microelectronic Materials</i> 367-68 (B. Cantor ed., 1998).</p> <p>Stephen Beeby et al., <i>MEMS Mechanical Sensors</i> 33-34 (2004).</p> <p>Nasser Kanani, <i>Electroplating: Basic Principles, Processes and Practice</i> 4-5 (2004).</p> <p>Jack Arabian, <i>Computer Integrated Electronics Manufacturing and Testing</i> 486 (1989).</p> <p>Fred W. Kear, <i>Printed Circuit</i></p>	<p>’827 Patent, Abstract, Figs. 3C, 4, 5, Col. 1:9-13; 1:15-18; 1:30-37; 1:50-52; 1:66-68; 3:31-48; 3:63-65; 4:1-3; 4:20-24; 4:28-31; 5:46-49; 6:30-65, claims 1 and 2</p> <p>’827 Patent Prosecution History, 5/24/90 Office Action at 3; Response to Office Action dated 7/23/90, at pp. 2-5</p> <p>Japanese Kokai Patent HEI 1-198,017</p> <p>Japanese Kokai Patent 123,089</p> <p>Japanese Kokai Patent SHO 53-28039</p> <p>U.S. Patent No. 4,906,341</p> <p>U.S. Patent No. 4,855,251</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			<p><i>Assembly Manufacturing</i> 35-38 (1987).</p> <p>Frank Porter, <i>Zinc Handbook: Properties, Processing, and Use in Design</i> 520-21 (1991).</p>	<p>U.S. Patent No. 4,263,606</p> <p>Modern Dictionary of Electronics, 6th Ed. (1984), at p. 121 ("bump")</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at pp. 16 ("bump," "bumped chips"), 85 ("metallization")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 1355 ("pad"), 1904 ("terminal area")</p> <p>See generally regarding electrodeposition, <i>Electroplating and Electrorefining of Metals</i>, Alexander Watt, Arnold Philip (2005, originally published in 1902)</p> <p>ON Semi Production Document, ON_00005560-5579</p>
	<p><i>said bumps being of substantially uniform height across said substrate:</i> ON Semiconductor notes that this phrase appears only in the</p>	<p><i>said bumps being of substantially uniform height across said substrate:</i> "said small mounds of metal utilized as contacts having</p>	<p>'827 Patent: col. 5:50-59, 5:60-6:3, and related Figures.</p> <p><i>Merriam-Webster's Collegiate Dictionary</i> 1287 (10th ed.</p>	<p>'827 Patent, Abstract, Figs. 3C, 4, 6 (prior art), 9, 10, Col. 1:9-13; 2:18-23; 2:28-41; 2:67-68; 3:1-8; 3:9-13; 3:31-48; 4:4-6; 4:14-16; 4:17-19; 4:20-24; 4:28-30; 5:31-</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
	<p>preamble of the asserted claim. Because this term does not recite limitations or give life, meaning, and vitality to the claim, no construction is needed. However, if the Court is inclined to construe this, ON Semiconductor contends that the phrase can be understood with the following construction:</p> <p>bumps: (separately construed below);</p> <p>substantially uniform height: (separately construed below).</p>	<p>substantially the same height above the semiconductor pads on which they are formed across the wafer." The preamble is a limitation.</p>	<p>2001).</p> <p><i>The American Heritage Dictionary</i> 1321 (2nd College ed. 1985).</p>	<p>42; 5:50-6:9; 6:30-48, claim 1</p> <p>'827 Patent Prosecution History, Response to Office Action dated 7/23/90, at p. 3</p> <p>Japanese Kokai Patent HEI 1-198017</p> <p>Japanese Kokai Patent SHO 53-28039</p> <p>U.S. Patent No. 3,855,083</p> <p>U.S. Patent No. 4,170,959</p> <p>See also support for "metallized bump"</p>
	<p>said bumps: see "metallized bumps"</p>	<p>bumps: see proposed construction for "metallized bump"</p>	<p>See "metallized bumps."</p>	<p>see support for "metallized bump"</p>
	<p>substantially uniform height: "approximately the same distance between the top of the bump and the top surface of the substrate."</p>	<p>substantially uniform height: see proposed construction for "said bumps being of substantially uniform height across said substrate"</p>	<p>See "said bumps being of substantially uniform height across said substrate."</p>	<p>see support for "said bumps being of substantially uniform height across said substrate"</p>
(a) providing a planar substrate having thereon a multiplicity of terminal areas;	N/A	N/A	N/A	N/A

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
(b) applying an electrical potential having a first electrical polarity to said terminal areas; (c) applying an electrical potential having a second electrical polarity to an electrical terminal immersed in a container of an electroplating solution; (d) exposing said substrate to said electroplating solution to permit the growth of said metallization bumps on said terminal areas; (e) controlling the growth of said metallization bumps in a predetermined region of said substrate by altering the metallic ion concentration of said electroplating solution in said predetermined region; (f) providing said container with an opening whose shape approximates that of said substrate; (g) positioning said substrate proximate to said container opening; (h) providing an inlet within said container for pumping said solution into said container, said solution exiting said container through said opening; wherein said metallic ion concentration of said electroplating solution is changed by:				
(k) in step (h) altering the flow rate of said solution through said opening.	<i>altering the flow rate of said solution through said</i>	<i>altering the flow rate of said solution through said</i>	'827 Patent: col. 4:65-68, 5:18-30, 5:43-45, and related	'827 Patent, Abstract, Figs. 7, 11, Col. 2:42-47; 2:59-62; 2:63-66;

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
	<p>opening: “changing the volume of electroplating solution per unit of time flowing out of the opening.”</p> <p>flow rate: (separately construed in Exhibit A).</p>	<p>opening: “Changing the volume of electroplating solution per unit of time through the opening of the solution container during the formation of the metallic bumps to control their growth in a predetermined region of the substrate.”</p>	<p>Figures.</p>	<p>3:1-8; 3:31-48; 4:7-10; 4:20-24; 4:38-41; 4:65-68; 5:1-11; 5:43-45; 6:30-62, claim 1</p> <p>'827 Patent Prosecution History, 5/24/90 Office Action at 3; Response to Office Action dated 7/23/90, at pp. 2-6</p> <p>Japanese Kokai Patent HEI 1-198,017</p> <p>Japanese Kokai Patent 123,089</p> <p>Japanese Kokai Patent 242,797</p> <p>Japanese Kokai Patent SHO 53-28039</p> <p>Webster's Ninth New Collegiate Dictionary (1988), at p. 75 (“alter”)</p> <p>Webster's Third New International Dictionary (1986), at p. 63 (“alter”)</p>
<p>2. The method of according to claim 1, wherein said metallization bumps comprise metal selected from the group consisting of silver and tin.</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>

EXHIBIT C**ON Semiconductor Corp. v. Samsung Electronics Co., Ltd.**
(Case No. 07-449-JJF)**Samsung Electronics Co., Ltd., v. ON Semiconductor Corp.**
(Case No. 06-720-JJF)**Disputed Terms from U.S. Patent No. 5,361,001**

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
4. A method of analog trimming, comprising the steps of:	<p><i>analog trimming:</i> ON Semiconductor notes that this term appears only in the preamble of the asserted claim. Because this term does not recite limitations or give life, meaning, and vitality to the claim, no construction is needed. If the Court is inclined to construe this term, however, ON Semiconductor contends that it should be construed as follows:</p> <p>“modifying an analog value or quantity”</p>	<p><i>analog trimming:</i> “Making a fine adjustment of an analog value of a circuit.” The preamble is a limitation.</p>	<p>'001 Patent: Abstract, col. 1:6-2:5, 2:15- 4:51, Figs. 1, 2.</p> <p>Response to Office Action dated 6/27/94, pp. 2-4.</p> <p>Eduard Sackinger and Walter Guggenbuhl, <i>An Analog Trimming Circuit Based on a Floating-Gate Device</i>, IEEE J. of Solid State Circuits, vol. SC-23. no. 6, Dec. 1988, at 1437-40.</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 39-40 (1984).</p> <p><i>Merriam-Webster's Collegiate Dictionary</i> 41 (10th ed. 2001).</p> <p><i>See e.g. American Heritage Dictionary</i> 106, 1295 (2nd College</p>	<p>'001 Patent, Abstract, Figs. 1, 2, Col. 1:6-26; 1:39-43; 1:57-61; 1:30-2:5; 2:8-9; 2:15-19; 2:37-45; 2:63-68; 3:1-21; 3:29-4:2; 3:49-54; 3:66-4:2; 4:7-17; 4:31-51</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 140 (“trimming”)</p> <p>Academic Press Dictionary of Science and Technology (1992), at p. 2265 (“trim”)</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at p. 554 (“trimming”)</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p.</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			ed. 1985).	650 ("trim," "trimmer") McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 2070-71 ("trim," "trimmer capacitor")
enabling conduction through a passive element in response to a first state of a control signal;	control signal: "a signal that conveys information about regulation or guidance"	control signal: "A signal that enables or disables conduction through an associated passive element of a trim circuit."	'001 Patent: Abstract, col. 1:11-13, 2:24-62, 3:22-4:17, 4:43-47, Figs. 1, 2 Response to Office Action dated 6/27/94, pp. 2-4. Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 917-20 (1984). <i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 133-39 (1977). <i>Merriam-Webster's Collegiate Dictionary</i> 252 (10th ed. 2001). <i>American Heritage Dictionary</i> 319, 1139 (2nd College ed. 1985).	'001 Patent, Abstract, Figs. 1, 2, Col. 2:10-11; 2:28-42; 2:46-49; 2:57-59; 3:24-27; 3:33-35; 3:40-43; 3:57-60; 4:3-6; 5:27-6:2 Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 121 ("signal") Academic Press Dictionary of Science and Technology (1992), at p. 514 ("control signal") McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp. 114 ("control signal," "control circuit"), 484 ("signal") The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 589 ("signal") McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 454 ("control signal"), 1823 ("signal")

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
disabling conduction through said passive element in response to a second state of said control signal; activating said control signal in response to a data signal to enable and disable said conduction through said passive element, said activating step including the steps (a) latching said data signal, and (b) logically combining said data signal with a logic signal for providing said control signal; and	N/A	N/A	N/A	N/A
setting said control signal to a fixed value after removal of said data signal.	<i>fixed value:</i> "a state that is not fluctuating or varying during a specified or predetermined time or condition"	<i>fixed value:</i> "A value that does not change."	'001 Patent: Abstract, col. 4:14-17, claim 5, Figs. 1, 2. Response to Office Action dated 6/27/94, pgs. 2-4. Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> , 380-81 (1984). <i>IEEE Standard Dictionary of</i>	'001 Patent, Abstract, Figs. 1, 2, Col. 1:6-10; 1:26-29; 1:48-56; 1:61-2:2; 2:3-5; 3:45-54; 3:66-4:2; 4:7-17; 4:18-30; 4:35-47; 4:49-51, claim 5 Academic Press Dictionary of Science and Technology (1992), at p. 1964 ("set")

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			<i>Electrical and Electronics Terms</i> 258-59 (1977).	<p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at p. 479 ("set")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 584 ("set")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at p. 1801 ("set")</p>

EXHIBIT D

ON Semiconductor Corp. v. Samsung Electronics Co., Ltd.
(Case No. 07-449-JJF)

Samsung Electronics Co., Ltd., v. ON Semiconductor Corp.
(Case No. 06-720-JJF)

Disputed Terms from U.S. Patent No. 5,563,594

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
8. A data conversion circuit, comprising:	N/A	N/A	N/A	N/A
a register having an input coupled for receiving parallel input data and having an output;	<p><i>a register having an input coupled for receiving parallel input data and having an output:</i></p> <p>It is ON Semiconductor's position that the Court need not construe this entire phrase. Instead, ON Semiconductor believes that the phrase can be understood according to the plain and ordinary meaning of its constituent terms or words.</p> <p>If the Court is inclined to construe this phrase, ON Semiconductor contends that it can be understood simply by construing the following terms:</p>	<p><i>a register having an input coupled for receiving parallel input data and having an output:</i> "A storage device having an input coupled for receiving simultaneously each bit of the input data and having an output"</p>	<p>See "register."</p>	<p>'594 Patent, Abstract, Col. 1:7-22; 1:25-27; 1:36-45; 1:57-59; 2:6-20; 2:26-29; 3:3-12; 3:18-29; 4:15-17; 5:38-44; claim 14</p> <p>Academic Press Dictionary of Science and Technology (1992), at pp. 586 ("data"), 1571 ("parallel input/output"), 1824 ("register," "register circuit")</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp. 132 ("data"), 382 ("parallel," "parallel input/output"), 448 ("register")</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
	<p>register: (separately construed below).</p> <p>coupled: (separately construed below).</p>			<p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at pp. 156-57 (“data”), 480-81 (“parallel,” “parallel output”), 554 (“register”)</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 517 (“data”), 1443-45 (“parallel,” “parallel input/output,” “parallel transmission”), 1678 (“register”)</p>
	<p>register: “a device capable of retaining or storing information.”</p>	<p>register: see proposed construction for “a register having an input coupled for receiving parallel input data and having an output”</p>	<p>’594 Patent: Abstract, col. 1:7-60, 2:7-6:28, Figs. 1, 3.</p> <p>Response to Office Action dated 2/22/96, p. 2.</p> <p>Donald L. Schilling, <i>Electronic Circuits, Discrete, and Integrated</i> 648-56 (1979).</p> <p>Nicholas L. Pappas, <i>Digital Design</i> 411-17 (1994).</p> <p>M. Morris Mano, <i>Digital Logic and Computer Design</i> 289-94 (1979).</p> <p>Edward J. McCluskey, <i>Logic Design Principles</i> 303 (1986).</p> <p>Rudolf F. Graf, <i>Modern Dictionary</i></p>	<p>see support for “a register having an input coupled for receiving parallel input data and having an output”</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			<p><i>of Electronics</i>, 843-44 (1984).</p> <p><i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 575-76 (1977).</p> <p>John Markus, <i>McGraw-Hill Electronics Dictionary</i> 448 (1994).</p>	
	<i>coupled</i> : “linked together”	<i>coupled</i> : The meaning of this term requires no construction. To the extent a construction is necessary, the term should be construed as “directly connected.”	<p>'594 Patent: col. 3:31-65, Figs. 1, 3.</p> <p>Response to Office Action dated 2/22/96, p. 2.</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 208-09 (1984).</p> <p><i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 146-48 (1977).</p> <p>John Markus, <i>McGraw-Hill Electronics Dictionary</i> 119 (1994).</p>	'594 Patent, Figs. 1-2, Col. 2:12-18; 3:49-64; 7:65-67; 8:1-2, claim 8
a multiplexer having an input coupled to said output of said register for providing serial data;	<i>a multiplexer having an input coupled to said output of said register for providing serial data:</i> The Court need not construe this, however, if the Court is inclined to construe this, ON Semiconductor contends that the phrase can be	<i>a multiplexer having an input coupled to said output of said register for providing serial data:</i> “A circuit that sequentially transmits the parallel input data from the register one bit at a time over a single output line.”	See “multiplexer.”	'594 Patent, Abstract, Col. 2:15-20; 2:29-31; 4:24-27; 7:65-8:2; 9:19-23 Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 91

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
	<p>understood with the following construction:</p> <p><i>multiplexer</i> (separately construed below).</p>			<p>("multiplexer")</p> <p>Academic Press Dictionary of Science and Technology (1992), at pp. 586 ("data"), 1426 ("multiplexer"), 1960 ("serial," "serial data," "serial input/output")</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp.132 ("data"), 352-53 ("multiplexer"), 478 ("serial," "serial input/output," "serial transfer")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at pp. 156-57 ("data"), 433 ("multiplexer"), 480 ("parallel"), 581-82 ("serial," "serial transfer")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 517 ("data"), 1309 ("multiplexer"), 1443 ("parallel"), 1797-98 ("serial," "serial input/output," "serial transfer")</p>
	<p><i>multiplexer</i>: "a device capable of manipulating multiple streams of digital information."</p>	<p><i>multiplexer</i>: see proposed construction for "a multiplexer having an input coupled to said output of said register for providing</p>	<p>'594 Patent: Abstract, col. 1:11-18, 2:14-17, 4:25-28, 5:35-41, Figs. 1, 3.</p> <p>Response to Office Action dated</p>	<p>see support for "a multiplexer having an input coupled to said output of said register for providing serial data"</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
		serial data”	<p>2/22/96, p. 2.</p> <p>Nicholas L. Pappas, <i>Digital Design</i> 231-46 (1994).</p> <p>M. Morris Mano, <i>Digital Logic and Computer Design</i> 175-82 (1979).</p> <p>Edward J. McCluskey, <i>Logic Design Principles</i> 507-10 (1986).</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i>, 648-49 (1984).</p> <p>Alfred W. Barber, <i>Practical Guide To Digital Integrated Circuits</i> 94-95 (1984).</p> <p><i>IEEE Standard Dictionary of Electrical and Electronics Terms</i>, 430-31 (1977).</p> <p>Markus, John, <i>McGraw-Hill Electronics Dictionary</i>, 352-53 (1994).</p>	
a comparator having first and second inputs and an output, said first input receiving a first control signal, said second input receiving a	comparator: “an electronic device that receives input from two or more sources and provides an output responsive to a comparison of the inputs”	comparator: “A device whose output signal depends on the result of comparing two control signals”	<p>’594 Patent: col. 3:31-49, 4:1-10, 4:32-45, Figs. 1-3.</p> <p>Response to Office Action dated 2/22/96, p. 2.</p>	<p>’594 Patent, Fig. 2, Col. 3:30-43; 3:66-4:4; 4:27-30; 4:31-34; 4:39-42; 8:3-7, claims 1, 5, 6, 7, 12, 13</p> <p>’594 Prosecution History, Response and Amendment to Office Action</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
second control signal, said output providing a compare signal having a first state when said first and second control signals match; and			<p>Donald L. Schilling, <i>Electronic Circuits, Discrete, and Integrated</i> 586-87 (1979).</p> <p>Nicholas L. Pappas, <i>Digital Design</i> 255-56 (1994).</p> <p>Mano, M. Morris, <i>Digital Logic and Computer Design</i> 164-67 (1979).</p> <p>Adel S. Sedra, <i>Microelectronic Circuits</i> 231-42 (2nd ed. 1987).</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 183 (1984).</p> <p>IEEE Standard Dictionary of Electrical and Electronics Terms 118 (1977).</p> <p>John Markus, <i>McGraw-Hill Electronics Dictionary</i> 105 (1994).</p>	<p>dated 2/2/1996, at pp. 1-3</p> <p>Academic Press Dictionary of Science and Technology (1992), at pp. 479 ("comparator," "comparator circuit"), 1323 ("match")</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at p. 105 ("comparator," "comparison")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 127 ("comparator")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at p. 418 ("comparator," "comparator circuit")</p>
	control signal: "a signal that conveys information about regulation or guidance"	control signal: "A signal for controlling initialization of the down counter"	<p>'594 Patent: Abstract, col. 1:7-10, 2:15-19, 2:67-3:2, 3:24-30, 6:6-12, 6:15-28, 6:35-37, Figs. 1-3.</p> <p>Response to Office Action dated 2/22/96, p. 2.</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 917-20 (1984).</p>	<p>'594 Patent, Abstract, Figs. 1-2, Col. 1:7-10; 2:38-60; 2:62-64; 2:67-3:2; 3:13-18; 3:18-29; 3:30-43; 3:66-4:4; 4:16-21; 4:27-30; 4:31-34; 4:39-42; 6:1-3; 6:6-7; 6:13-24; 6:35-37; 8:3-12, claims 1, 5, 7</p> <p>'594 Prosecution History, Response and Amendment to Office Action</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			<p><i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 133-39 (1977).</p> <p><i>Merriam-Webster's Collegiate Dictionary</i> 252 (10th ed. 2001).</p>	<p>dated 2/2/1996, at pp. 1-3</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 121 ("signal")</p> <p>Academic Press Dictionary of Science and Technology (1992), at p. 514 ("control signal")</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp.114 ("control circuit", "control signal"), 484 ("signal")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 589 ("signal")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 454 ("control signal"), 1823 ("signal")</p>
	<p><i>first and second control signals match:</i> The Court need not construe this, however, if the Court is inclined to construe this, ON Semiconductor contends that the phrase can be understood with the following constructions:</p> <p><i>control signals:</i> (separately</p>	<p><i>first and second control signals match:</i> "The data represented by the first and second control signals is the same."</p>	<p>See "control signals" and "match."</p>	<p>'594 Patent, Fig. 2, Col. 3:30-43; 3:66-4:4; 4:27-30; 4:31-35; 4:39-42; 8:3-7, claims 1, 5, 7, 12</p> <p>'594 Prosecution History, Response and Amendment to Office Action dated 2/2/1996, at pp. 1-3</p> <p>Academic Press Dictionary of</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
	<p>construed above);</p> <p>match: (separately construed below).</p>			<p>Science and Technology (1992), at pp. 479 ("comparator," "comparator circuit"), 1323 ("match")</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at p. 105 ("comparator," "comparison")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 127 ("comparator")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at p. 418 ("comparator," "comparator circuit")</p>
	<p>match: "corresponding, suitably associated, or harmonious"</p>	<p>match: see proposed construction for "first and second control signals match"</p>	<p>'594 Patent: col. 3:40-42, 3:66-4:4, 4:27-35, 4:40-45, Figs. 1-3.</p> <p>Response to Office Action dated 2/22/96, p. 2.</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 604 (1984).</p> <p>John Markus, <i>McGraw-Hill Electronics Dictionary</i> 328 (1994).</p> <p><i>IEEE Standard Dictionary of</i></p>	<p>see support for "first and second control signals match"</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			<i>Electrical and Electronics Terms</i> 403 (1977).	
a down counter responsive to said compare signal for initializing a count value and responsive to a clock signal for counting down to generate a transfer data signal having a symmetric duty cycle to enable transfer of said parallel input data to said register.	clock signal: "a signal that conveys clocking or timing information"	clock signal: "A signal consisting of a series of pulses used for synchronizing the data conversion circuit."	<p>'594 Patent: col. 1:25-32, 1:40-45, 2:7-6:12, Figs. 1-3.</p> <p>Response to Office Action dated 2/22/96, p. 2.</p> <p>See "signal."</p> <p>Donald L. Schilling, <i>Electronic Circuits, Discrete, and Integrated</i> 618-20 (1979).</p> <p>Nicholas L. Pappas, <i>Digital Design</i> 301-07 (1994).</p> <p>M. Morris Mano, <i>Digital Logic and Computer Design</i> 202-05 (1979).</p> <p>Edward J. McCluskey, <i>Logic Design Principles</i> 335-37 (1986).</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 165-66 (1984).</p> <p>Alfred W. Barber, <i>Practical Guide To Digital Integrated Circuits</i> 78-80 (1984).</p> <p><i>IEEE Standard Dictionary of</i></p>	<p>'594 Patent, Abstract, Col. 1:14-19; 1:40-41; 2:21-34; 2:35-38; 3:64-65; 3:66-4:1; 4:4-10; 4:36-40; 4:51-53; 4:63-65; 5:8-10; 5:18-20; 8:8-12, claims 1, 2, 7, 9</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at pp. 24 ("clock"), 121 ("signal")</p> <p>Academic Press Dictionary of Science and Technology (1992), at p. 447 ("clock," "clock cycle," "clock pulses")</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp. 92 ("clock"), 484 ("signal")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at pp. 115 ("clock"), 589 ("signal")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 387 ("clock"), 1823 ("signal")</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			<i>Electrical and Electronics Terms</i> 104 (1977).	
	transfer data signal: “a signal that conveys information regarding the transfer of data”	transfer data signal: “A periodic signal requesting that external logic write the next set of parallel input data to the register.”	<p>'594 Patent: Abstract, col. 1:7-10, 1:52-60, 2:18-20, 2:62-67, 3:14-30, 3:44-6:12, Figs. 1-3.</p> <p>Response to Office Action dated 2/22/96, p. 2.</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 1053-54 (1984).</p> <p><i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 732-33 (1977).</p>	<p>'594 Patent, Abstract, Col. 1:7-10; 1:20-22; 1:33-36; 1:36-40; 1:57-59; 2:67-3:2; 3:13-18; 3:24-30; 3:44-47; 4:16-23; 5:23-30; 6:6-12; 6:13-17; 6:19-28; 7:65-8:12, claims 1, 4, 7</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 121 (“signal”)</p> <p>Academic Press Dictionary of Science and Technology (1992), at p. 586 (“data”)</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp. 132 (“data”), 484 (“signal”), 167 (“duty cycle”)</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at pp. 156-57 (“data”), 589 (“signal”)</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 517 (“data”), 1823 (“signal”)</p>

EXHIBIT E**ON Semiconductor Corp. v. Samsung Electronics Co., Ltd.**
(Case No. 07-449-JJF)**Samsung Electronics Co., Ltd., v. ON Semiconductor Corp.**
(Case No. 06-720-JJF)**Disputed Terms from U.S. Patent No. 6,362,644**

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
6. An integrated circuit, comprising:	N/A	N/A	N/A	N/A
a semiconductor package having first and second pins respectively adapted for receiving first and second data signals, third and fourth pins for respectively receiving first and second termination signals, and a supply pin coupled for receiving a power supply voltage;	termination signal: "a signal that dissipates or absorbs energy from a transmission line or other device"	termination signal: "A signal that configures the circuit to receive data signals from one of several available logic families."	'644 Patent: Abstract, col. 1:15-5:3, Figs. 1-5. Response to Office Action dated 9/12/01, pp. 4, 10-13. Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 1021-22 (1984). <i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 711-12 (1977).	'644 Patent, Figs. 1, 2, 3, 5, Col. 2:25-44; 3:2-7; 3:8-34; 3:51-4:5; 4:19-23; 4:32-35; 4:46-56; 4:58-62; claims 10-11, 14-15 '644 Patent Prosecution History, Response to Office Action dated 9/12/2001, at pp. 10-13 Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 121 ("signal") Academic Press Dictionary of Science and Technology (1992), at p. 2189 ("termination") McGraw-Hill Electronics

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
				<p>Dictionary 5th Ed. (1994), at pp. 484 ("signal"), 534 ("termination," "termination line")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at pp. 389 ("loading"), 589 ("signal")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 1823 ("signal"), 2004 ("termination")</p>
	<p><i>third and fourth pins for respectively receiving first and second termination signals:</i> The Court need not construe this, however, if the Court is inclined to construe this, ON Semiconductor contends that the phrase can be understood with the following constructions:</p> <p><i>pins</i> (construed separately below);</p> <p><i>termination signals</i> (construed separately above).</p>	<p><i>third and fourth pins for respectively receiving first and second termination signals:</i> "Third and fourth pins that receive different termination signals (e.g., not power supply or ground pins) dependent upon the selected one of several available logic families."</p>	<p>See "pins" and "termination signals."</p>	<p>'644 Patent, Abstract, Col. 1:39-46; 2:2-7; 2:16-43-; 2:65-3:34; 3:47-4:5; 4:12-14; 4:19-23; 4:46-56; 4:57-5:3</p> <p>'644 Patent Prosecution History, Response to Office Action dated 9/12/2001, at pp. 9-15</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 69 ("impedance")</p> <p>Academic Press Dictionary of Science and Technology (1992), at pp. 1090 ("impedance"), 1258 ("load"), 1733 ("programmable"), 2189 ("termination")</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
				<p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp. 309 ("load"), 534 ("termination," "termination line")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 389 ("load," "loading")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 1157 ("load"), 2004 ("termination")</p>
	<p>pin(s): "a conductor configured to make an electrical connection."</p>	<p>pin(s): "A small conductive rod used as an electrical terminal external to the semiconductor package."</p>	<p>'644 Patent: Abstract, col. 2:15-5:3, Fig. 5.</p> <p>Response to Office Action dated 9/12/01, pp. 4, 10-13.</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 749 (1984).</p> <p>Samsung data sheets for accused products.</p> <p>JEDEC publications, including JESD 79 (DDR SDRAM Specification).</p>	<p>'644 Patent, Abstract, Col. 2:20-23; 2:43-44; 3:2-5; 3:34-35; 3:47-49; 3:51-53; 4:16-31; 4:49-54; 4:62-5:3; 5:57-6:3, claims 6 and 12</p> <p>'644 Patent Prosecution History, Response to Office Action dated 9/12/2001, at pp. 10, 13</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 101 ("pin")</p> <p>Academic Press Dictionary of Science and Technology (1992), at p. 1651 ("pin")</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at p. 401</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
				<p>("pin")</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 500 ("pin")</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at p. 1510 ("pin")</p>
	<i>coupled:</i> "linked together."	<i>coupled:</i> The meaning of this term requires no construction. To the extent a construction is necessary, the term should be construed as "directly connected."	<p>'644 Patent: col. 4:38-45, Fig. 5.</p> <p>Response to Office Action dated 9/12/01, pp. 4, 10-13.</p> <p>Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 208-09 (1984).</p> <p><i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 146-48 (1977).</p> <p>John Markus, <i>McGraw-Hill Electronics Dictionary</i> 119 (1994).</p>	<p>'644 Patent, Col. 2:15-20; 2:35-38; 2:63-3:2; 3:47-51; 4:32-35, claims 6, 8, 9, 10, 12</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at p. 119 ("couple")</p>
and a semiconductor die housed in the semiconductor package for operating from the power supply voltage, and having a first load	N/A	N/A	N/A	N/A

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
element coupled between the first and third pins to terminate the first data signal, and a second load element coupled between the second and fourth pins to terminate the second data signal.				
7. The integrated circuit of claims 6, wherein the first and second load elements are resistors.	N/A	N/A	N/A	N/A
8. The integrated circuit of claim 6, wherein the semiconductor die includes a receiver circuit having first and second inputs coupled to the first and second pins, respectively.	N/A	N/A	N/A	N/A
9. The integrated circuit of claim 6, wherein the semiconductor die	N/A	N/A	N/A	N/A

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
includes a driver circuit having first and second outputs coupled to the first and second pins, respectively.				
10. The integrated circuit of claim 6, wherein the first data signal is from a first logic family, and the third pin is coupled for receiving a first termination voltage characteristic of the first logic family.	N/A	N/A	N/A	N/A
12. A method of operating an integrated circuit, comprising the steps of: applying first and second logic signals to first and second pins, respectively, of a semiconductor package of the integrated circuit;	N/A	N/A	N/A	N/A
and loading the first	<i>first and second load elements are</i>	<i>first and second load elements are</i>	See "coupled," "pins,"	'644 Patent, Abstract, Col. 1:20-26;

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
<p>and second logic signals with first and second load elements, respectively, of the integrated circuit, where the first and second load elements are coupled to third and fourth pins of the semiconductor package to provide a programmable termination for the first and second logic signals.</p>	<p><i>coupled to third and fourth pins of the semiconductor package to provide a programmable termination:</i> The Court need not construe this, however, if the Court is inclined to construe this, ON Semiconductor contends that the phrase can be understood with the following constructions:</p> <p><i>coupled</i> (separately construed above);</p> <p><i>pins</i> (separately construed above);</p> <p><i>semiconductor package</i> (separately construed in Exhibit A);</p> <p><i>programmable termination</i> (separately construed below).</p>	<p><i>coupled to third and fourth pins of the semiconductor package to provide a programmable termination:</i> “The first and second load elements are connected to the third and fourth pins that receive different signals (e.g., not power supply or ground pins) to configure the circuit to receive data signals from one of several available logic families.”</p>	<p>“semiconductor package,” and “programmable termination.”</p>	<p>1:39-46; 2:20-34; 3:2-23; 3:54-64; 4:12-14; 4:46-56; 4:57-5:3; 6:6-9; 6:36-38</p> <p>’644 Patent Prosecution History, Response to Office Action dated 9/12/2001, at pp. 9-15</p> <p>Dictionary of Electronic Packaging, Microelectronic, & Interconnection Terms (1990), at p. 69 (“impedance”)</p> <p>Academic Press Dictionary of Science and Technology (1992), at pp. 1090 (“impedance”), 1258 (“load”), 1733 (“programmable”), 2189 (“termination”)</p> <p>McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp. 309 (“load”), 534 (“termination,” “termination line”)</p> <p>The Illustrated Dictionary of Electronics 6th Ed. (1994), at p. 389 (“load,” “loading”)</p> <p>McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at pp. 1157 (“load”), 2004 (“termination”)</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
	<i>programmable termination:</i> “an electrical circuit that can be configured to provide various levels or degrees for the dissipation or absorption of electrical energy from a transmission line or other device”	<i>programmable termination:</i> “The capability to configure the circuit to receive data signals from one of several available logic families.”	'644 Patent: Abstract, col. 1:39-41, 2:20-27, 3:2-7, 3:51-57, 4:52-62, Figs. 1-5. Response to Office Action dated 9/12/01, pp. 5, 13-15. Rudolf F. Graf, <i>Modern Dictionary of Electronics</i> 782-85 (1984). <i>IEEE Standard Dictionary of Electrical and Electronics Terms</i> 528-29 (1977).	'644 Patent, Abstract, Col. 1:39-46; 2:20-44; 3:2-35; 3:54-4:5; 4:12-23; 4:32-35; 4:46-56; 4:57-5:3; claims 10-11, 14-15 '644 Patent Prosecution History, Response to Office Action dated 9/12/2001, at pp. 9-15 Academic Press Dictionary of Science and Technology (1992), at p. 2189 (“termination”) McGraw-Hill Electronics Dictionary 5th Ed. (1994), at pp. 534 (“termination,” “termination line”) McGraw-Hill Dictionary of Scientific and Technical Terms 5th Ed. (1994), at p. 2004 (“termination”)
16. The integrated logic circuit of claim 12, further comprising the step of applying a power supply voltage to a fifth pin of the semiconductor package to bias the integrated circuit.	N/A	N/A	N/A	N/A

EXHIBIT F

ON Semiconductor Corp. v. Samsung Electronics Co., Ltd.
(Case No. 07-449-JJF)

Samsung Electronics Co., Ltd., v. ON Semiconductor Corp.
(Case No. 06-720-JJF)

Disputed Terms from U.S. Patent No. 5,252,177

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
1. A method for forming multilayer wiring in a semiconductor device, said semiconductor device comprising a semiconductor substrate and insulation layers and conductive layers formed over a top surface of said semiconductor substrate, said method comprising the steps of:	N/A	N/A	N/A	N/A
forming a contact hole by selectively etching out a region of an insulation layer disposed on a first conductive layer using a photoresist	<i>photoresist pattern:</i> "A light sensitive organic material formed into a predetermined pattern and that can be removed in oxygen plasma."	<i>photoresist pattern:</i> The meaning of this phrase requires no construction. To the extent a construction is necessary, the phrase should be construed as "a layer of photoresist material that	'177 Patent: col. 1:44-57, and related Figures. U.S. Pat. No. 4,857,141 (filed Apr. 13, 1988) at 4:1-38.	'177 Patent, Abstract, Col. 1:31-33; claims 1, 8 McGraw-Hill Dictionary of Scientific And Technical Terms Fourth Edition (1989), at p. 1420

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
pattern to thereby expose a top surface of said first conductive layer;		selectively exposes an underlying layer." "Photoresist" is "a light sensitive coating."	<i>Comprehensive Dictionary of Electrical Engineering</i> 487 (Phillip A. Laplante ed., 1999). Donard de Cogan, <i>Design and Technology of Integrated Circuits</i> 62-63 (1990). Badih El-Kareh, <i>Fundamentals of Semiconductor Processing Technologies</i> 201 (1995). John R. Hollahan, <i>Techniques and Applications of Plasma Chemistry</i> 351-52 (1974).	("photoresist") Microchip Fabrication Second Edition (1990), at p. 511 ("photoresist") Modern Dictionary of Electronics 6th Ed. (1984), at p. 743 ("photoresist") <i>Comprehensive Dictionary of Electrical Engineering</i> 487 (Phillip A. Laplante ed., 1999).
	expose a top surface of said first conductive layer: "The uppermost surface of the unoxidized conductive layer is uncovered by the etching step."	expose a top surface of said first conductive layer: The meaning of this phrase requires no construction. To the extent a construction is necessary, the phrase should be construed as "exposing a top surface of a layer of electrically conductive material [by etching]."	'177 Patent: col. 1:24-44, 2:50-3:14, 3:15-22.	'177 Patent, Abstract, Figs. 1A-B, 2A-B, Col. 1:31-35; 1:41-62; 2:10-17; 2:19-34; 2:58-61; claims 1, 8 '177 Patent Prosecution History, Reasons For Allowance
removing said photoresist pattern positioned on said insulation layer by plasma etching simultaneously forming a protective oxide layer on the exposed top	This claim is invalid for failure to comply with the requirements of 35 U.S.C. § 112. To the extent the Court construes this term, ON Semiconductor contends that the phrase can be understood with the following construction:	plasma etching: The meaning of this phrase requires no construction. To the extent a construction is necessary, the phrase should be construed as "a process of removing one or more materials using plasma."	'177 Patent: col. 1:26-35, 1:44-2:2, 2:3-9. Response to Office Action dated 3/30/93 (amendment to claims). <i>Comprehensive Dictionary of</i>	'177 Patent, Abstract, Col. 1:5-8; 1:31-33; 2:3-7; 2:20-21; 2:23-34; 2:61-68; 3:1-2; 3:23-28; 3:59-4:2; 4:34-37, claims 1, 3, 6-10 '177 Patent Prosecution History,

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
surface of said first conductive layer; and	plasma etching: "An etching process for forming a contact hole using a plasma of ionized gases in which the ions are accelerated toward the material desired to be removed."		<p><i>Electrical Engineering</i> 491 (Phillip A. Laplante ed. 1999).</p> <p>Donard de Cogan, <i>Design and Technology of Integrated Circuits</i> 87-88 (1990).</p> <p>Rossnagel et al., <i>Handbook of Plasma Processing Technology</i> 16-17 (1990).</p> <p>John R. Hollahan, <i>Techniques and Applications of Plasma Chemistry</i> 355-62 (1974).</p> <p>Williams et al., <i>Semiconductor Industrial Hygiene Handbook</i> 28 (1995).</p> <p>JP61-140161 (pub. June 27, 1986) at pp. 4-5 of translation.</p> <p>Burba et al., <i>Selective Dry Etching of Tungsten for VLSI Metallization</i>, J. of the Electrochemical Soc'y, Oct. 1986, at 2113-18 (1986).</p>	<p>Reasons For Allowance</p> <p>'177 Patent Prosecution History, Response to Office Action dated 3/30/93</p> <p>Microchip Fabrication Second Edition (1990), at pp. 162-66 ("lithography"), 227-232, 507 ("etch")</p> <p>Modern Dictionary of Electronics 6th Ed. (1984), at pp. 352 ("etching"), 754 ("plasma," "plasma etching")</p> <p>Burba et al., <i>Selective Dry Etching of Tungsten for VLSI Metallization</i>, J. of the Electrochemical Soc'y, Oct. 1986, at 2113-18 (1986).</p>
		simultaneously form[ing] a protective oxide layer: "During the process of removing photoresist through plasma ashing or etching, creating an oxide layer sufficient to protect the underlying first		<p>'177 Patent, Abstract, Fig. 2A, Col. 1:31-35; 2:23-34; 2:61-3:8; 3:23-32; 3:59-4:2; 4:34-37, claims 1, 8</p> <p>'177 Patent Prosecution History,</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
		conductive layer."		Reason For Allowance Webster's Ninth New Collegiate Dictionary (1988), at pp. 946 ("protect") Webster's Third New International Dictionary (1986), at p. 1823 ("protective")
	<i>simultaneously forming / simultaneously form:</i> "forming at the same time" / "form at the same time"	<i>simultaneously forming / simultaneously form:</i> "forming as part of the plasma ashing/etching also used to remove photoresist."	See "simultaneously forming a protective oxide layer."	'177 Patent, Abstract, Col. 2:23-34; 2:61-3:7; 3:23-32; claims 1, 8 '177 Patent Prosecution History, Reasons For Allowance see also support for "simultaneously form[ing] a protective oxide layer"
	<i>protective oxide layer:</i> "An oxide layer of at least 30 Å thickness that functions to prevent damage to an underlying layer during subsequent processing steps."	<i>protective oxide layer:</i> "An oxide layer sufficient to prevent damage to an underlying layer."	Badih El-Kareh, <i>Fundamentals of Semiconductor Processing Technologies</i> 39 (1995). John R. Hollahan, <i>Techniques and Applications of Plasma Chemistry</i> 354-55 (1974). Donard de Cogan, <i>Design and Technology of Integrated Circuits</i> 74-75 (1990).	'177 Patent, Abstract, Figs. 2A-B, Col. 2:19-23; 2:45-46; 2:61-68 3:1-8; 3:23-38; 3:47-55; 4:13-15; 4:24-40; 4:55-56, claims 1, 8 '177 Patent Prosecution History, Reasons For Allowance Webster's Third New International Dictionary (1986), at p. 1823 ("protective") McGraw-Hill Dictionary of

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			U.S. Pat. No. 5,210,042 (filed Jan. 29, 1991) at col. 3:17-24.	Scientific And Technical Terms Fourth Edition (1989), at p. 1350 ("oxide") see also support for "simultaneously form[ing] a protective oxide layer"
	<i>exposed top surface:</i> "the uppermost surface of the unoxidized conductive layer is uncovered by the etching step."	<i>exposed top surface:</i> The meaning of this phrase requires no construction. To the extent a construction is necessary, the phrase should be construed as "the exposed top surface of a layer of electrically conductive material."		'177 Patent, Abstract, Figs. 1A-B, 2A-B, Col. 1:31-35; 1:41-62; 2:10-17; 2:19-34; 2:58-61; 3:23-28; claims 1, 8 '177 Patent Prosecution History, Reasons For Allowance see also support for "expose a top surface of said first conductive layer"
removing said oxide layer before forming a second conductive layer on said exposed top surface of said first conductive layer.	<i>removing said oxide layer before forming a second conductive layer on said exposed top surface of said first conductive layer:</i> "getting rid of the entire protective oxide layer before forming a second conductive layer such that the top surface of the first conductive layer is completely exposed"	<i>removing said oxide layer before forming a second conductive layer on said exposed top surface of said first conductive layer:</i> The meaning of this phrase requires no construction. To the extent a construction is necessary, the phrase should be construed as "removing the protective oxide from the top surface of the first conductive layer before forming a	'177 Patent: col. 2:19-22, 3:14-22, 3:23-38, and related Figures. U.S. Pat. No. 4,857,141 (filed Apr. 13, 1988) at col. 5:1-15. JP3-082127 (pub. Apr. 8, 1991). JP2-133939 (pub. May 23, 1990). JP2-10856 (pub. Jan. 16, 1990).	'177 Patent, Col. 2:19-34; 3:8-13; 3:54-58; 4:3-5; 4:38-40, claims 1, 5, 8, 15 '177 Patent Prosecution History, Reasons For Allowance McGraw-Hill Dictionary of Scientific And Technical Terms Fourth Edition (1989), at p. 1350 ("oxide")

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
		second conductive layer.”	JP61-140161 (pub. June 27, 1986).	
2. The method as claimed in claim 1, wherein said first conductive layer is aluminum.	N/A	N/A	N/A	N/A
3. The method as claimed in claim 2, wherein during said plasma ashing, said semiconductor substrate is heated to a temperature of 250°C.-350°C. in a reaction room having an oxygen atmosphere at a pressure of 4-5 Torr.	<p>This claim is invalid for failure to comply with the requirements of 35 U.S.C. § 112. To the extent the Court construes this term, ON Semiconductor contends that the phrase can be understood with the following construction:</p> <p>plasma ashing: “A process for removing an organic material, such as a photoresist in a plasma of oxygen.”</p>	<p>plasma ashing: The meaning of this phrase requires no construction. To the extent a construction is necessary, the phrase should be construed as “a plasma etch designed to remove photoresist.”</p>	<p>’177 Patent: col. 1:41-2:2, 2:24-35, 2:58-3:13, 3:23-38, and related Figures.</p> <p>U.S. Pat. No. 4,857,141 (filed Apr. 13, 1988) at col. 4:1-33.</p> <p>Response to Office Action dated 3/30/93 (amendment to claims).</p> <p>Donard de Cogan, <i>Design and Technology of Integrated Circuits</i> 75 (1990).</p> <p>John R. Hollahan, <i>Techniques and Applications of Plasma Chemistry</i> 352-55 (1974).</p> <p>Williams et al., <i>Semiconductor Industrial Hygiene Handbook</i> 28 (1995).</p> <p>U.S. Pat. No. 5,210,042 (filed Jan.</p>	<p>’177 Patent, Abstract, Col. 1:49-57; 2:23-34; 2:61-68; 3:1-2; 3:23-28; claims 1, 3, 6-10</p> <p>’177 Patent Prosecution History, Reasons For Allowance</p> <p>’177 Patent Prosecution History, Response to Office Action dated 3/30/93</p> <p>U.S. Patent No. 5,228,052</p> <p>Modern Dictionary of Electronics 6th Ed. (1984), at p. 754 (“plasma”)</p>

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
			29, 1991) at col. 3:17-24.	
4. The method as claimed in claim 1, wherein said oxide layer is aluminum oxide layer and has a thickness of 30Å-80 Å.	N/A	N/A	N/A	N/A
5. The method as claimed in claim 1, wherein said oxide layer is removed by argon sputtering etching.	N/A	N/A	N/A	N/A
6. The method as claimed in claim 1, wherein said plasma etching is performed in 500 SCCM of oxygen gas and at a pressure of 4-5 Torr.	N/A	N/A	N/A	N/A
7. The method as claimed in claim 6, wherein during said plasma ashing a temperature of said semiconductor substrate is 250°-350° C.	N/A	N/A	N/A	N/A

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
8. A method for forming an electrical connection on a semiconductor substrate between a first conductive layer and a second conductive layer through an intervening insulation layer formed over said first conductive layer, said method comprising the steps of:	N/A	N/A	N/A	N/A
forming a photoresist pattern on said insulation layer;	N/A	N/A	N/A	N/A
after forming said photoresist pattern, forming a contact hole by selectively etching out exposed regions of said insulation layer to expose a top surface of said first conductive layer;	N/A	N/A	N/A	N/A
removing remaining				

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
photoresist positioned on said insulation layer by plasma ashing to simultaneously form a protective oxide layer on said exposed top surface of said first conductive layer; and	<i>simultaneously form</i> : “forming at the same time”	<i>simultaneously form a protective oxide layer</i> : “During the process of removing photoresist through plasma ashing or etching, creating an oxide layer sufficient to protect the underlying first conductive layer.”	See “simultaneously form”/“simultaneously forming”	See support for “simultaneously form” and “protective oxide layer”
removing said oxide layer before forming said second conductive layer on said exposed top surface of said first conductive layer.	<i>removing said oxide layer before forming said second conductive layer on said exposed top surface of said first conductive layer</i> : “getting rid of the entire protective oxide layer before forming a second conductive layer such that the top surface of the first conductive layer is completely exposed.”	<i>removing said oxide layer before forming said second conductive layer on said exposed top surface of said first conductive layer</i> : The meaning of this phrase requires no construction. To the extent a construction is necessary, the phrase should be construed as “removing the protective oxide from the top surface of the first conductive layer before forming a second conductive layer.”	'177 Patent: col. 2:19-22, 3:14-22, 3:23-38, and related Figures. U.S. Pat. No. 4,857,141 (filed Apr. 13, 1988) at col. 5:1-15. JP3-082127 (pub. Apr. 8, 1991). JP2-133939 (pub. May 23, 1990). JP2-10856 (pub. Jan. 16, 1990). JP61-140161 (pub. June 27, 1986).	'177 Patent, Col. 2:19-34; 3:8-13, claims 1, 5, 8, 15 '177 Patent Prosecution History, Reasons For Allowance McGraw-Hill Dictionary of Scientific And Technical Terms Fourth Edition (1989), at p. 1350 (“oxide”)
9. The method as claimed in claim 8, wherein said plasma ashing is performed in 500 SCCM of oxygen gas and at a pressure of 4-5 Torr.	N/A	N/A	N/A	N/A
10. The method as claimed in claim 9,	N/A	N/A	N/A	N/A

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
wherein during said plasma ashing a temperature of said semiconductor substrate is 250°-350° C.				
11. The method as claimed in claim 8, wherein said first conductive layer is mostly aluminum.	N/A	N/A	N/A	N/A
12. The method as claimed in claim 8, wherein said first conductive layer is aluminum containing approximately one percent silicon and approximately one half percent copper.	N/A	N/A	N/A	N/A
13. The method as claimed in claim 8, wherein said protective layer is an aluminum oxide layer.	N/A	N/A	N/A	N/A
14. The method as	N/A	N/A	N/A	N/A

Asserted Claims	ON Semi Proposed Constructions	Samsung Proposed Constructions	ON Semiconductor's Support	Samsung's Support
claimed in claim 13, wherein said protective layer has a thickness of 30Å-80Å.				
15. The method as claimed in claim 8, wherein said protective layer is removed by argon sputtering etching.	N/A	N/A	N/A	N/A

2337062